Patent Claims

1. Use of core/shell particles whose shell forms a matrix and whose core is essentially solid and has an essentially monodisperse size distribution as template for the production of inverse opal structures.

2. Use according to Claim 1, characterised in that the shell in the core/shell particles is bonded to the core via an interlayer.

3. Use according to at least one of the preceding claims, characterised in that the core:shell weight ratio in the core/shell particles is in the range from 20:1 to 1.4:1, preferably in the range from 6:1 to 2:1 and particularly preferably in the range from 5:1 to 3.5:1.

4. Use according to at least one of the preceding claims, characterised in that the shell in the core/shell particles consists of essentially uncrosslinked organic polymers, which are preferably grafted onto the core via an at least partially crosslinked interlayer.

5. Use according to at least one of the preceding claims, characterised in that the core in the core/shell particles consists of an organic polymer, which is preferably crosslinked.

6. Use according to at least one of Claims 1 to 4, characterised in that the core in the core/shell particles consists of an inorganic material, and the core:shell weight ratio is preferably in the range from 5:1 to 1:10, in particular in the range from 2:1 to 1:5 and particularly preferably in the region below 1:1.

7. Process for the production of inverse opal structures, characterised in that
   a) a dispersion of core/shell particles whose shell forms a matrix and whose core is essentially solid is dried,
   b) optionally one or more precursors of suitable wall materials are added, and
   c) the cores are subsequently removed.

8. Process for the production of inverse opal structures according to Claim 7, characterised in that, in a step a2), the application of a mechanical force to a mass of the core/shell particles pre-dried in step a1) takes place.

9. Process for the production of inverse opal structures according to Claim 8, characterised in that the action of a mechanical force takes place through uniaxial pressing or during an injection-moulding operation or during a transfer moulding operation or during (co)extrusion or during a calendering operation or during a blowing operation

10. Process for the production of inverse opal structures according to at least one of Claims 7 to 9, characterised in that the precursor in step b) is a solution of an ester of an inorganic ortho-acid with a lower alcohol.

11. Process for the production of inverse opal structures according to at least one of Claims 7 to 10, characterised in that step b) is carried out under reduced pressure, preferably in a static vacuum of $p < 1$ mbar.

12. Process for the production of inverse opal structures according to at least one of the preceding claims, characterised in that step c) comprises calcination, preferably at temperatures above 200°C, particularly preferably above 400°C.

13. Process for the production of inverse opal structures according to at least one of Claims 7 to 11, characterised in that step c) is an etching process, preferably etching with HF.

14. Process for the production of inverse opal structures according to at least one of the preceding claims, characterised in that the core/shell particles are removed in step c).